

3.6.4 Additional Provisions

There are several areas related to Resolution 46 which have been identified for its improvement.

3.6.4.1 Interference From New FS

New FS transmitters could cause excessive interference to existing MSS systems. Currently Resolution 46 does not provide for any protection from such stations. The BR is not required to carry out any examination of the FS notices with regard to the protection of receiving space stations in Resolution 46 bands. The Working Party of the CPM is being asked to develop an appropriate amendment to Resolution 46.

3.6.4.2 Additional Information

The information provided in Appendix 3 is not sufficient to carry out necessary calculations relating to Non-GSO MSS satellite networks. Regulatory provisions need to be made to provide for such information.

3.6.4.2.1 The orientation of the satellite transmitting antenna beams to permit improvement in PFD calculation.

3.6.4.2.2 A list of the information which should be sent in connection with the provisions of Section 2.8 of Res. 46.

3.6.4.2.3 The type of multiple access and modulation and the maximum and average beam peak e.i.r.p./4 Khz and e.i.r.p./1 MHz for each beam should be submitted in order to better represent the interference potential and to do representative interference analyses.

3.6.5 Application of Res. 46 to the 1525-1559/1626.5 MHz Bands

Resolution 46 was adopted at WARC-92 to provide interim procedures for the coordination of NGSO satellite systems with other services. The procedures are to be applied only in frequency bands in which specific reference is made to Resolution 46 in footnotes to the Table of Allocations (e.g., Footnote 726D). The U.S. and the U.K. together took a Reservation to the Final Acts stating that they will not apply Resolution 46 to geostationary satellite systems in certain frequency bands, e.g., the 1525-1559/1626.5-1660.5 MHz bands.¹ The purpose of the separate statement was

¹ See Final Protocol No. 679 WARC-92 Final Acts. The text reads:
Referring to statements relating to the frequency range below 3 GHz concerning mobile-satellite services, it is necessary to highlight an oversight in drafting and reading texts which could lead to a new and unnecessary burden of coordination between geostationary space stations and terrestrial services in certain frequency bands. Accordingly, the above Administrations

to ensure that existing systems, such as the Inmarsat and the AMSC systems, would not be subject to additional coordination procedures. At WRC-95, the U.S. should clarify this position with appropriate language in the allocations.

3.6.6. Summary

This section has identified areas where Regulatory/Procedural proposals need to be developed for WRC-95. In the Appendix are excerpts from ITU-R documents which provide more detailed descriptions of the methods and calculations referenced in the text.²

3.7 Proposals

3.7.1 Sharing Proposals

MOD 731E The use of the band 1610-1626.5 MHz by the mobile-satellite service (Earth-to-space) and by the radiodetermination-satellite service (Earth-to-space) is subject to the application of the coordination and notification procedures set forth in Resolution 46 (WARC-92). A mobile earth station operating in either of the services in this band shall not produce ~~an~~ a mean e.i.r.p. density in excess of -15 dB (W/4 kHz) in the part of the band used by systems operating in accordance with the provisions of No. 732, unless otherwise agreed by the affected administrations. In the part of the band where such

will not accept any commitment for this form of coordination arising from omission of the term "non-geostationary" in the text of certain footnotes, e.g. Footnote Nos. 726x and 7xx, to the Table of Frequency Allocations in Article 8. This reservation is made on behalf of all national and international organizations for whose frequency assignments the two countries are the notifying Administrations.

² See Final Protocol No. 679 WARC-92 Final Acts. The text reads:

Referring to statements relating to the frequency range below 3 GHz concerning mobile-satellite services, it is necessary to highlight an oversight in drafting and reading texts which could lead to a new and unnecessary burden of coordination between geostationary space stations and terrestrial services in certain frequency bands. Accordingly, the above Administrations will not accept any commitment for this form of coordination arising from omission of the term "non-geostationary" in the text of certain footnotes, e.g. Footnote Nos. 726x and 7xx, to the Table of Frequency Allocations in Article 8. This reservation is made on behalf of all national and international organizations for whose frequency assignments the two countries are the notifying Administrations.

systems are not operating, a value of -3 dB (W/4 kHz) is applicable. ~~Stations of the mobile-satellite service shall not cause harmful interference to, or claim protection from, stations in the aeronautical radionavigation service, stations operating in accordance with the provisions of No. 732 and stations in the fixed service operating in accordance with the provisions on No. 730.~~

Reason Inclusion of the term "mean" is intended to clarify how the e.i.r.p. density limit should be measured. The text proposed for deletion at the end of this provision is unnecessary to protect the primary allocation status of the identified services and creates confusion and ambiguity concerning the primary status of the mobile-satellite service in the 1610-1626.5 MHz band.

SUP 733E ~~Harmful interference shall not be caused to stations of the radio astronomy service using the band 1610.6-1613.8 MHz by stations of the radiodetermination-satellite and mobile satellite services. (No. 2904 applies.)~~

Reason This provision is unnecessary to protect the primary allocation status of radio astronomy and creates confusion and ambiguity concerning the status of the satellite services that are allocated on a primary status in the 1610-1626.5 MHz band.

MOD 746B In the band 2160-2200 MHz coordination of space stations of the mobile-satellite service with respect to terrestrial services is required only if the power flux density or Fractional Degradation Percentage at the Earth's Surface exceeds the threshold limits in No. 2566, in Recommendation (TG 2-2/TEMP/89 (Rev2)).

NOC 746C In the United States, the use of the bands 1970-2010 MHz and 2160-2200 MHz by the mobile-satellite service shall not commence before 1 January 1996

Reason This facilitates the early introduction of emerging mobile-satellite technology.

MOD 753F The use of the band 2483.5-2500 MHz by the mobile-satellite service and the radiodetermination-satellite service is subject to the application of the coordination and notification procedures set forth in Resolution 46 (WARC-92). Coordination of space stations of the mobile-satellite and radiodetermination-satellite services with respect to terrestrial services is required only if the power-flux density

produced at the Earth's surface exceeds: ~~the limits in No. 2566.~~

-150 dB (W/m²) in any 4 kHz band for angles of arrival between 0 and 5 degrees above the horizontal plane;

-150 + 0.65 (δ-5) dB (W/m²) in any 4 Khz band for angles of arrival δ (in degrees) between 5 and 25 degrees above the horizontal plane;

-137 dB (W/m²) in any 4 kHz band for angles of arrival between 25 and 90 degrees above the horizontal plane.

These limits relate to the power flux-density which would be obtained under assumed free-space conditions.

In respect of assignments operating in this band, the provisions of Section II, paragraph 2.2 of Resolution 46 (WARC-92) shall also be applied to geostationary transmitting space stations with respect to terrestrial stations.

Reason

To facilitate the introduction of mobile-satellite systems in this band while providing adequate protection of analog point-to-point and multipoint fixed systems in the band.

3.7.2 New Allocations

MHz
1525 - 1530

Allocation to Services		
Region 1	Region 2	Region 3
1525 - 1530 SPACE OPERATION (space-to-Earth) FIXED <u>MOBILE-SATELLITE</u> (space-to-Earth) MARITIME MOBILE SATELLITE (space to Earth) Land Mobile Satellite (space to Earth) 726B Earth Exploration-Satellite Mobile except aeronautical mobile 724 722 723B 725 726A 726D	1525 - 1530 SPACE OPERATION (space-to-Earth) MOBILE-SATELLITE (space-to-Earth) Earth Exploration-Satellite Fixed Mobile 723 722 723A 726A 726D	1525 - 1530 SPACE OPERATION (space-to-Earth) FIXED MOBILE-SATELLITE (space-to-Earth) Earth Exploration-Satellite Mobile 723 724 722 726A 726D

Reason: To make allocation generic.

MHz
1530 - 1533

Allocation to Services		
Region 1	Region 2	Region 3
1530 - 1533 SPACE OPERATION (space-to-Earth) <u>MOBILE-SATELLITE</u> (space-to-Earth) MARITIME MOBILE SATELLITE (space-to-Earth) LAND MOBILE SATELLITE (space to Earth) Earth Exploration-Satellite Fixed Mobile except aeronautical 722 723B 726A <u>726C</u> 726D	1530 - 1533 SPACE OPERATION (space-to-Earth) MARITIME MOBILE SATELLITE (space to Earth) <u>MOBILE-SATELLITE</u> (space-to-Earth) LAND MOBILE SATELLITE (space to Earth) Earth Exploration-Satellite Fixed Mobile 723 722 726A 726C 726D	

MOD 726C

The band 1530 -1544 MHz is allocated to the mobile-satellite (space-to-Earth) service, and the band 1626.5 - 1645.5 MHz is allocated to the mobile-satellite (Earth-to-space) service, on a primary basis subject to the following conditions: maritime mobile-satellite distress and safety communications shall have priority access and immediate availability over all other mobile-satellite communications operating under this provision. Communications of mobile-satellite system stations not participating in the global maritime distress and safety system (GMDSS) shall operate on a secondary basis to distress and safety communications of stations operating in the GMDSS. Account shall be taken of the priority of safety-related communications in the other mobile-satellite services.

Reason:

To make allocation generic.

MHz
1533 - 1559

Allocation to Services				
Region 1		Region 2		Region 3
1533 - 1535		1533 - 1535		
SPACE OPERATION (space-to-Earth)		SPACE OPERATION (space-to-Earth)		
MARITIME MOBILE SATELLITE (space to Earth)		MARITIME MOBILE SATELLITE (space to Earth)		
<u>MOBILE-SATELLITE</u> <u>(space-to-Earth)</u>		<u>MOBILE-SATELLITE</u> <u>(space-to-Earth)</u>		
Earth Exploration-Satellite		Earth Exploration-Satellite		
Fixed		Fixed		
Mobile except aeronautical mobile		Mobile 723		
Land Mobile Satellite (space to Earth) 726B		Land Mobile Satellite (space to Earth) 726B		
722 723B 726A <u>726C</u> 726D		722 726A 726C 726D		
1535 - 1544 MARITIME MOBILE SATELLITE (space to Earth) Land Mobile Satellite (space to Earth) 726B <u>MOBILE-SATELLITE</u> <u>(space-to-Earth)</u>				
722 726A 726C 726D 727				
1544 - 1545 MOBILE-SATELLITE (space-to-Earth)				
722 726D 727 727A				

Allocation to Services												
Region 1			Region 2				Region 3					
1545 - 1555 AERONAUTICAL MOBILE SATELLITE (R) (space-to-Earth) <u>MOBILE-SATELLITE</u> (space-to-Earth)												
722			726A		726D		727		729	729A	730	<u>730C</u>
1555 - 1559 LAND MOBILE SATELLITE (space-to-Earth) <u>MOBILE-SATELLITE</u> (space-to-Earth)												
722			726A		726D		727		730	730A	730B	730C

Reason: To make allocations generic and to provide priority access and immediate availability for aeronautical and maritime distress and safety communications.

MOD 730C

The band 1545 - 1559 MHz is allocated to the mobile-satellite (space-to-Earth) service, the band 1646.5 - 1660 MHz is allocated to the mobile-satellite (Earth-to-space) service, and the band 1660 - 1660.5 MHz is allocated to the mobile-satellite (Earth-to-space) and radio astronomy services, on a primary basis subject to the following conditions: the aeronautical mobile-satellite (R) service shall have priority access and immediate availability over all other mobile-satellite communications within a network operating under this provision; mobile-satellite systems shall be interoperable with the aeronautical mobile-satellite (R) service; account shall be taken of the priority of safety-related communications in the other mobile-satellite services.

MHz
1626.5 - 1660.5

Allocation to Services										
Region 1				Region 2				Region 3		
1626.5 - 1631.6				1626.5 - 1631.5						
MARITIME MOBILE SATELLITE (Earth-to-space)				MOBILE-SATELLITE (Earth-to-space)						
<u>MOBILE-SATELLITE</u> <u>(Earth-to-space)</u>										
Land Mobile Satellite (Earth-to-space) 726B										
722	726A	<u>726C</u>	726D	722	726A	726C	726D	727	730	
727										
730										
1631.5 - 1634.5 MARITIME MOBILE SATELLITE (Earth-to-space) (space-to-Earth) LAND MOBILE SATELLITE (Earth-to-space) (space-to-Earth) 726B <u>MOBILE-SATELLITE</u> <u>(Earth-to-space)</u>										
722	726A	726C	726D	727	730	734A				
1645.5 - 1646.5 MOBILE-SATELLITE (Earth-to-space)										
722	726D	734A								
1646.5 - 1656.5 <u>MOBILE-SATELLITE (Earth-to-space)</u>										
AERONAUTICAL MOBILE SATELLITE (R) (Earth-to-space)										
722	726A	726D	727	729A	730	<u>730C</u>	734A			
1656.5 - 1660 <u>MOBILE SATELLITE (Earth-to-space)</u>										
LAND MOBILE SATELLITE (Earth-to-space)										
722	726A	726D	727	730	730A	730B	730C	734A		

Allocation to Services						
Region 1		Region 2			Region 3	
1660 - 1660.5 RADIO ASTRONOMY						
LAND MOBILE SATELLITE (Earth-to-space)						
<u>MOBILE-SATELLITE (Earth-to-space)</u>						
722	726A	726D	730A	730B	730C	736

Reason:

To make allocations generic and to provide priority access and immediate availability for aeronautical and maritime distress and safety communications.

MHz
1675 - 1710

Allocation to Services		
Region 1	Region 2	Region 3
1675 - 1690 METEOROLOGICAL AIDS FIXED METEOROLOGICAL-SATELLITE (space-to-Earth) MOBILE except aeronautical mobile MOBILE SATELLITE (Earth-to-space) 722		
1690 - 1700 METEOROLOGICAL AIDS METEOROLOGICAL SATELLITE (space-to-Earth) <u>MOBILE SATELLITE</u> <u>(Earth-to-space)</u> Fixed Mobile except aeronautical mobile 671 722 741	1690 - 1700 METEOROLOGICAL AIDS METEOROLOGICAL-SATELLITE (space-to-Earth) <u>MOBILE SATELLITE</u> <u>(Earth-to-space)</u> 671 722 740 742	

MHz
1700 - 1710

Allocation to Services		
Region 1	Region 2	Region 3
1700 - 1710 FIXED METEOROLOGICAL-SATELLITE (space-to-Earth) <u>MOBILE SATELLITE</u> <u>(Earth-to-space)</u> Mobile except aeronautical mobile 671 722 743A	1700 - 1710 FIXED METEOROLOGICAL-SATELLITE (space-to-Earth) MOBILE except aeronautical mobile <u>MOBILE SATELLITE (Earth-to-space)</u> 671 722 743 <u>(Earth-to-space)</u>	

MHz
2010 - 2200

Allocation to Services		
Region 1	Region 2	Region 3
2010 - 2025 FIXED MOBILE <u>MOBILE-SATELLITE (Earth-to-space)</u> 746A		

2160 - <u>2165</u> FIXED MOBILE 746A	2160 - 2170 FIXED MOBILE MOBILE-SATELLITE (space-Earth) 746A 726B 746C	2160 - <u>2165</u> FIXED MOBILE 746A
2165 - 2170 FIXED MOBILE <u>MOBILE-SATELLITE</u> (space-to-Earth) 746A		2165 - 2170 FIXED MOBILE <u>MOBILE-SATELLITE</u> (space-to-Earth) 746A

Reason:

To provide additional allocations for the mobile-satellite service.

MHz
2300-2450

Allocation to Services		
Region 1	Region 2	Region 3
2300 - 2450 FIXED Amateur Mobile Radiolocation 664 743A 752 <u>752A</u>	2300 - 2450 FIXED MOBILE except aeronautical mobile RADIOLOCATION Amateur 664 751 752 <u>752A</u>	

752 The band 2400 - 2500 MHz (centre frequency 2450 MHz) is designated for industrial, scientific and medical (ISM) applications. Radio services operating within this band must accept harmful interference which may be caused by these applications. ISM equipment operating in this band is subject to the provisions of No. 1815.

ADD 752A The band 2300-2310 MHz may also be used by the Mobile-Satellite Service on a primary basis in either the space-to-Earth or Earth direction. The band 2390-2400 MHz may also be used by the Mobile-Satellite service (Earth-to-space) on a primary basis. The band 2402-2417 MHz may also be used by the Mobile-Satellite service (space-to-Earth) on a primary basis.

Reason to provide more spectrum for MSS on a global basis.

3.7.3 Regulatory Changes to Radio Regulations - Revisions to Resolution 46

Add 2.5 bis Those fixed service assignments, identified in 2.5.4 and 2.5.5 where the PFD/FDP in Recommendation (TG 2-2/TEMP.89 (Rev1) are exceeded, but receive protection in accordance with the application of the method in Recommendation (TG2-2/TEMP/100 (Rev2) are excluded from the requirement to coordinate.

Add 2.7.1 bis i) shall assess the systems compliance with the thresholds set forth in Recommendation (TG 202/TEMP/89 (Rev2) of the systems resultant parameters do not exceed the thresholds in this Recommendation in the bands concerned. There is no need for coordination with the fixed services.

ii) If the system parameters exceed the thresholds in 2.7.1 bis (i) the Bureau shall use the standard computation program in Recommendation (TG 202/TEMP/100 (Rev2) taking into account the

system specific characteristics and the referenced characteristics of the FS systems, to calculate interference levels to identify geographic areas in which the protection criteria referenced in Rec. (TG 202/TEMP/100 (Rev1) for the referenced analogue/digital FS systems are not met.

iii) The BR shall publish both the Appendix 3 parameters and the list of administrations which it considers potentially affected.

Add 2.8 bis

i) If, within the six month period referred to above, no objection is received from any administration, including those identified by the Bureau in the Special Section, the notifying administration is considered as having successfully coordinated the non-GSO MSS system with the fixed services.

ii) Upon receipt of the publication mentioned in Section 2.7.2, an administration which has not been included in the list of affected administrations by the BR may, within the six month period referred to above, request to be included if it considers that it could be affected (Paragraph 2.8 of Annex to Resolution 46). However, this inclusion needs to be validated by the BR on the basis of the criteria.

iii) The notifying administration and any administration that provided an objection on the planned non-GSO MSS system within the six month period would enter into detailed coordination consultations using actual FS stations and characteristics.

Reason

To provide for use of the system specific characteristics of MSS systems in certain 1-3 GHz downlink MSS allocations.

MOD Footnote (1) to Section 3.1, Res. 46

1 The coordination area is defined as the service area in which it is intended to operate the typical earth stations, extended in all directions by a coordination distance determined according to ITU-R IS 847 except for aircraft stations where a coordination distance of 500 Km and the method of ITU-R IS 850 should be used. ~~or as a circular zone with a radius of 500 Km centered on the coordinates of the fixed earth station. For a service area in which aircraft earth stations operate, the coordination area is the service area extended in all directions by a coordination distance of 1000 Km.~~

Reason

To reduce the coordination area for Non-GSO MSS earth stations.

Add Section II, 2.3.

For the assignments identified in Section 2.5 those which are in the affected region may be determined by the calculation method in Draft New Recommendation (WP-8D/TEMP/1 (Rev.1), December 8, 1994.

Reason

To define the region for coordination of MSS system assignments.

APPENDIX 3.8.1
IWG-3 - MSS ABOVE 1 GHZ - LIST OF PARTICIPANTS

Audrey Allison	FCC
Melvin Barmat	Jansky/Barmat
Richard Barnet	TRW
Jeff Binckes	COMSAT Mobile Communications
Sandra Bisbey	Telecommunications Systems
James R. Carroll	SFA
T. Stephen Cheston	Iridium, Inc.
Christine M. DiLapi	Motorola
James G. Ennis	Iridium, Inc.
Richard Evans	AMSC
Ben C. Fisher	Fisher, Wayland
Diane Garfield	State
Thomas Gergely	NSF
Richard Gould	Telecommunications Systems
William Hatch	NTIA
Cecily Holiday	FCC
William Horne	STEL
Donald Jansky	Jansky/Barmat
Andy Haire	MCI
Steven Heppe	Loral Qualcomm
Kris Hutchison	Aeronautical Radio
Ken Keane	Winston & Strawn
Thomas Keller	VLBMH
Kristi Kendall	FCC
Perry Klein	AMSAT
Damon C. Ladson	FCC
Barry Lambergman	Fletcher Heald
Ronald Lepkowski	CCI
Lon Levin	AMSC
Mark N. Lewellen	Westinghouse
Robert May	U.S. Air Force
Edward Miller	Teledesic
Sam Nguyen	COMSAT Mobile Communications
Kaye Nilson	Compass Rose International
Walter Pappas	for U.S. Coast guard
Mahasti Pourdastan	BA
Jay Ramasastry	LQP/Qualcomm
Brian Ramsey	NTIA
Edward Reinhart	Consultant for Hughes Aircraft
Glenn Richards	Fisher, Wayland
Warren G. Richards	State
Paul Rinaldo	ARRL
Bev Sincavage	LTA
Thomas Sullivan	CSC
Leslie Taylor	Leslie Taylor Associates
Wes Vivian	Wireless Cable Association
James Vorhies	NTIA

Alix Watson
Jack Wengryniuk
Gerry Wiggen
Richard Wilder
Bret Wilson

Air Touch Communications
COMSAT LABS
SFA
ARRL
Rockwell

Appendix 3.8.2
IWG-3 - MSS ABOVE 1 GHZ
LIST OF DOCUMENTS

No.	Source	Title
01	Richards	Agenda - June 16, 1994
02	WRC-93	Res. 1 -Agenda for WRC-95
03	IAC	IWG-3 Terms of Reference
04	IAC	IWG-3 Proposed Work Program
05	IAC	Proposed IAC Meeting Schedule
06	Richards	Meeting for IWGs 3, 4 & 5
07	Jansky	1-3 GHz MSS Spectrum Requirements
08	WRC-93	Rec. 2, MSS Networks Published Under Res 46
09	ITU-RB	Report on the Experience of the RB in the Application of Res. 46
10/2	Levin	History of MSS International Allocations
11/2	LTaylor	Spectrum Requirements Section of IWG-3 Preliminary Report
12	Levin	Proposal for the Bands 1530-1544/1626.5- 1645.5 MHz and 1545-1559/1646.5-1660.5 MHz
13	Barmat	Proposal for FN 731E, 1610-1626.5 MHz
14	Sullivan	Proposal for the Band 1675-1710 MHz
15	Binckes	Proposal for FN 746B, 1970-2010/2160-2200 MHz
16	Levin	Proposal for the Bands 2010-2025/2165-2170 MHz
17/2	Lewellen	Proposal for Revision of Power Flux Density (PFD) Limits in the 2483.5-2500 MHz Band as Provided in Footnote 753F and RR 2566
18	Binckes	Proposal for Rec. 2, MSS Networks Published Under Res. 46
19	Jansky	Experience with Application of Resolution 46 and Associated RR Provisions (TG 8/3-12)
20	Carroll	Regulatory, Operational and Technical Constraints,1492-1525 MHz Band
21	Lepkowski	Relative Status of Services in FN 731E
22	DiLapi	Modification of the Date of Entry into Force of 2 GHz MSS Allocations
23	Jansky	A Framework for pfd Triggers in the MSS Bands
24	Jansky	Implementation of NGSO MSS Coordination Method
25	Binckes	Applicability of RR 2566 to FN 746B
27	Levin	Mobile Satellite Service Allocations in the 2500- 2535 MHz (space to Earth) and 2670-2690 MHz (Earth to space) Bands
28	Ladson	Minutes - June 16, 1994 Meeting
29	EC	Comments on FCC Notice of Proposed Rulemaking
30	ITU Council	Future Conferences of the Union
31	Fisher	Minutes - July 5, 1994 Meeting
32	Long	Summary of ITU-R Activities 1452-1525 MHz

33	Binckes	Method for Converting MSS Voice Traffic Demand Forecasts into Spectrum Requirements (MSS Networks above 1 GHz)
34	Fisher	Minutes - July 19, 1994 Meeting
35	Fisher	Minutes - August 16, 1994 Meeting
36	Levin	New Mobile-Satellite Service Allocation in the 1559-1569 MHz Band (space to Earth)
37	Jansky	Contribution to Regulatory Issues Section (VI) of IWG-3 Preliminary Report
38	NTIA	Spectrum Use Summary, 137 MHz - 5 GHz
39	Binckes	Draft IWG-3 Report Element: section IV.A, Advancement of Date of Entry Into Force-FN 746B
40	LTaylor	Outline for U.S. Proposals Section of IWG-3 Preliminary Report
41	Gould	Footnotes RR 731E and 733E to the 1610-1626.5 MHz Band
42	Lewellen	Draft Text for Section IX of IWG-3 Preliminary Report, Recommendations for WRC-97 Agenda
43	Fisher	Minutes - November 8, 1994 Meeting
44	IWG-3	Preliminary Draft Report
45	Rinaldo	Minutes - December 13, 1994 Meeting

APPENDIX 3.8.3

Analysis of MSS Bands

I. 1492-1525 MHz (Space to Earth)

Generic MSS in Region 2 only, except in the United States where the band is used for aeronautical telemetry. MSS subject to Resolution 46; PFD RR 2566.

II. 1525-1544, 1545-1559 MHz (Space to Earth) and 1626.5-1645.5, 1646.5-1660.5 MHz (Earth to Space)

A. 1525-1530 MHz - Generic MSS in Region 2 and 3; Primary maritime mobile satellite in Region 1; secondary land-mobile satellite service in Region 1 MSS subject to Resolution 46; PFD RR 2566, limited to non-speech low bit rate data transmissions.

B. 1530-1544 (Space to Earth)/1626.5-1645.5 (Earth to Space) - Generic MSS in seven countries; subject to priority for maritime distress and safety communications

(1) 1530-1533/1631-1634.5 MHz - Land MSS and maritime MSS, primary in all three regions.

(2) 1626.5-1631.5 MHz - MSS primary in Regions 2 and 3; primary maritime MSS and secondary land MSS in Region 1.

(3) 1533-1544/1635.5-1645.5 MHz - Maritime MSS primary in all three regions; land MSS secondary.

(4) 1544-1545/1645.5-1646.5 MHz - MSS primary in all three regions.

C. 1545-1559/1646.5-1660.5 MHz - MSS subject to Resolution 46; PFD RR 2566.

(1) 1545-1555 (Space to Earth)/1646.5-1656.5 MHz (Earth to Space) - Aeronautical safety MSS primary in all three regions.

(2) 1555-1559 (Space to Earth)/1656.5-1660.5 (Earth to Space) MHz - Land MSS primary in all three regions; in five countries, band is allocated to generic MSS and in Argentina and U.S. subject to priority for aeronautical safety services.

D. 1660-1660.5 MHz (Earth to Space) - Land mobile satellite in all three regions. FN 730C provides alternative MSS allocation subject to coordination.

III. 1610-1626.5 MHz (Earth to Space)/2483.5-2500 MHz (Space to Earth) - Generic in all three regions, subject to Resolution 46.

A. 1610.6-1613.8 MHz - Radio Astronomy issue 733E

- B. 1613.8-1626.5 MHz (Space to Earth) - Secondary allocation in all three regions, subject to Resolution 46.
- IV. 1675-1710 MHz (Earth to Space) - Region 2 only. Meteorological band issues-sharing, subject to Resolution 46.
- V. 1930-1970 MHz (Earth to Space)/2120-2160 MHz (Space to Earth) - Region 2 only; secondary.
- VI. 1970-2010 MHz (Earth to Space)/2160-2200 MHz (Space to Earth)
- A. 1970-1980 MHz/2160-2170 MHz - Region 2 only.
- B. 1980-2010 MHz/2170-2200 MHz - MSS primary in all three regions; available 2005 except in U.S. where available 1996.
- C. 1990-2110 MHz - Broadcast auxiliary - United States.
- VII. 2500-2535 MHz (Space to Earth) 2655-2690 MHz (Earth to Space)
- A. 2500-2520 MHz - Subject to Article 14 for use within national boundaries.
- B. 2520-2535/2655-2670 MHz - Only available under Article 14 for use within national boundaries (Nos. 7544, 766).
- C. 2670-2690 MHz - Primary MSS in all regions subject to Article 14; not subject to Article 14 after 1/1/2005; also subject to Resolution 46 and limited to use within national boundaries.

The coordination process for assignments of non-GSO MSS systems and fixed services (description of approach)

In the following , Administration A is the one planning to implement an assignment in a non-GSO MSS system. Administration B is the one whose FS assignments overlap with those of Administration A and could be affected. The proposed coordination approach would consist in applying the following steps (see Figure 1):

- a) An administration wishing to establish a non-GSO MSS system submits to the Bureau complete Appendix 3 information, including system specific characteristics, under § 2.6 of Section II of the Annex to Resolution 46 (WARC-92). This information shall include all the parameters required both to make the calculations required to assess compliance with Recommendation xxx [doc 2-2/Temp/83 Rev2] and to run a simulation on the standard computation program described in Annex 1 to Recommendation zzz [Doc 2-2/TEMP/80 Rev2] to check if the coordination thresholds specified in Recommendation xxx for the protection of the analogue and digital FS systems are met.
- b) The Bureau shall review the information for completeness and, performing the required calculations, shall assess the system's compliance with the limits set forth in Recommendation xxx [doc 2-2/TEMP/83 Rev2]. If the system's resultant parameters do not exceed the limits set forth in Recommendation xxx, there is no need for coordination with fixed services.
- c) If the system's parameters exceed the limits set forth in Recommendation xxx, the Bureau shall use the standard computation program described in Annex 1 of recommendation zzz and, taking into account the system-specific characteristics for the non-GSO MSS system and the reference characteristics of the FS systems in the band (s) involved, per § 2.5, Section II, Annex to Resolution 46 (WARC-92), calculate interference levels as appropriate to identify geographic areas and thus administrations in whose territory the protection criteria referred to in recommendation zzz for the reference analogue/digital FS systems are not met.
- d) Then the BR publishes both the Appendix 3 parameters and the list of administrations which it considers to be potentially affected. This list supersedes that mentioned in note 1 under 2.7.2 of the Annex to Resolution 46.

Using the present provisions of Resolution 46, affected administrations are limited to those having FS assignments either "recorded in the Master Register" (2.5.4) or "not notified, but in use or planned to be brought into use within the next three years" (2.5.5), and which in addition might be affected according to the results of the pfd/FDP calculations and/or the application of the method in Recommendation zzz. Since the BR can know only of assignments in the first category (recorded in the Master Register), this list cannot contain administrations in the second category (with assignments not notified, but in use or planned to be brought into use within the next three years). The administrations falling in this second category, or for which an omission may

have occurred should therefore have the possibility to make themselves known, which is the purpose of step e).

- e) Administrations review the published information (per § 2.8, Section II, Annex to Resolution 46 (WARC-92)) with a view to comment within six months from the date of publication of the relevant Special Section, and provide technical details of the terrestrial stations upon which any negative comment is based.
 - If, within the six month period referred to above, no objection is received from any administration, including those identified by the Bureau in the Special Section, the notifying administration is considered as having successfully coordinated the non-GSO MSS system with the fixed services.
 - Upon receipt of the publication mentioned in section 2.7.2, an administration which has not been included in the list of affected administrations by the BR may, within the six month period referred to above, request to be included if it considers that it could be affected (Paragraph 2.8 of Annex to Resolution 46). However, this inclusion needs to be validated by the BR on the basis of the criteria mentioned in paragraph d) above.
- f) The notifying administration and any administration that provided an objection on the planned non-GSO MSS system within the six month period mentioned in paragraph e) would enter into detailed coordination consultations using actual FS stations and characteristics (see Annex A).
- g) Administrations should then communicate to the Bureau any modifications to the published characteristics of their respective networks or stations required to reach agreement on the coordination. The Bureau would publish these modifications indicating that they resulted from the efforts of the administrations concerned to reach agreement on the coordination of the non-GSO MSS system.

This procedure retains the current approach of Resolution 46 procedure, and is expected to necessitate only straight forward modification to the existing text of Resolution 46 procedure. A possible text for these modifications is provided as an illustration of this simplified approach (see Annex B).

FCC INDUSTRY ADVISORY COMMITTEE
FOR THE
ITU 1995 WORLD RADIO COMMUNICATION CONFERENCE

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INTERIM REPORT
OF
INFORMAL WORKING GROUP 4

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Chair

Michael L. Richmond
Vice Chair

**Interim Report of
WRC-95 Industry Advisory Committee
Informal Working Group 4 (Feeder Links)**

1. Introduction
2. Overall Spectrum Requirements for MSS Feeder Links
 - 2.1 The need for sufficient spectrum
 - 2.2 First generation vs. second generation requirements
3. Considerations Relating to Choice of Frequency Bands for MSS Feeder Links
 - 3.1 Possible impact on MSS system design, operation, and cost
 - 3.2 Co-directional vs. reverse direction use of a given band
4. Feasibility of Frequency Sharing Between NGSO MSS Feeder Links and Other Services and Between Multiple NGSO MSS Feeder Link Systems
 - 4.1 Co-directional frequency sharing between NGSO MSS Feeder Links and GSO FSS systems
 - 4.2 Reverse direction frequency sharing between NGSO MSS Feeder Links and GSO FSS systems
 - 4.3 Frequency sharing between NGSO MSS Feeder Links and Fixed Service Networks
 - 4.3.1 Interference from NGSO MSS Satellite Feeder Link into Fixed Service Station
 - 4.3.2 Interference from Fixed Service Station into NGSO MSS Satellite Feeder Link
 - 4.3.3 Interference Between NGSO MSS Feeder Link Earth Station and Fixed Service Station
 - 4.3.4 Reverse Band Working of NGSO MSS Feeder Links and the FS
 - 4.4 Frequency sharing between NGSO MSS Feeder Links and the Aeronautical Radionavigation Service (ARNS) in the 5000-5250 MHz Band
 - 4.4.1 Sharing between Non-GSO/MSS feeder links and MLS
 - 4.4.2 Sharing between NGSO MSS feeder links and other services
 - 4.5 Frequency Sharing Between Multiple NGSO MSS Feeder Link Networks
 - 4.5.1 Summary of Results of Recent Analyses and Computer Simulations
 - 4.5.2 Summary of Mitigation Techniques
5. Regulatory and Procedural Provisions for NGSO MSS Feeder Link Networks
 - 5.1 Introduction
 - 5.2 Possible Regulatory/Procedural Revisions
 - 5.2.1 General
 - 5.2.2 Changes to Article 8
 - 5.2.2.1 Bands Below 17.7 GHz
 - 5.2.2.2 Bands Above 17.7 GHz
 - 5.2.3 Changes to Article 11 and/or Resolution 46
 - 5.2.4 Changes to Article 29
6. U.S. Proposals for MSS Feeder Link Spectrum